

Public Page
Applying External Corrosion Direct Assessment to Difficult to Inspect Areas
Contract Number: DTRS56005-T-0003
6th Quarterly Report
February 2006 – May 2006
Battelle

ECDA is a process designed to provide an alternative method of pipeline integrity assessment that may be used in lieu of ILI and pressure testing. The ECDA process is contained in NACE document RP0502. It has been embraced by the industry and included in regulatory documents pertaining to pipeline integrity management plans. ECDA validation has been an industry concern since the industry does not have extensive experience with implementing the process as a whole.

A previous ECDA validation effort conducted by Battelle has been completed. This provided evidence that the ECDA process is viable within the limits of the variables considered in that project. Some conditions that could be more difficult to inspect were considered in the previous project but other difficult to inspect areas were omitted from the previous project. In order for pipeline operators to successfully complete an ECDA project in accordance with the CFR's, such locations must be considered to assist operators with completion of an ECDA on many pipelines.

The objective of this project will be to extend the anecdotal information that has been used to describe expected difficulties in implementing the ECDA process to specific sites such as station pipeline (meter stations or compressor stations) or bare pipeline. The expected outcome will be to independently assess and/or verify whether ECDA is actually of little use in these areas, or to offer suggestions or insights to make the ECDA process more amenable to evaluating these sites so that operators have a sound basis to make integrity assessments.

A PRCI/GTI/INGAA/NACE committee has compiled and prioritized a list of hard to inspect areas based on their collective experience with the indirect inspection methods included in NACE RP 0502 and performing ECDA projects. This project will concentrate on the evaluation and validation of the highest priority items in the following list to provide guidance to the industry when such areas are encountered during the performance of ECDA projects.

Prioritized ECDA Hard to Inspect Areas

1. Cased crossings
 - a. Pipe partially or fully encased in concrete anchors.
 - b. Pipe into buildings etc through brick/concrete walls
2. Pavement or other hard surfaces
3. Shielding coatings (coating that cause electrical shielding per RP 0502)
 - a. Insulated pipelines
 - b. Joint coatings (shrink sleeves)
4. Significant stray current (HVAC, HVDC etc)
5. Water/River crossings
 - a. Concrete coated pipe/swamp weights
6. Station piping or other similar complex piping locations
7. Bare or poorly coated pipelines
8. Shielding Soils
9. Deep burial conditions
10. Multiple, parallel pipelines in the same R-O-W.
11. Spans

An ECDA project is currently underway by one operator that considers two of the higher priority areas including 60 cased road crossings and 9 water crossings. The indirect inspection step has been completed but the direct examination step will not be completed until 2006. Direct examination will include prior ILI evaluation data in the casing, additional wireline (tethered) ILI inspection of the pipe within the casing, and/or guided wave UT inspection. Evaluation of an additional 60 cased crossings is planned for 2006. This will provide background for casing inspection methods and needed improvements to NACE RP 0502 that does not currently address this subject.